547 687

(19) World Intellectual Property Organization

International Bureau



(43) International Publication Date 16 September 2004 (16.09.2004)

PCT

(10) International Publication Number WO 2004/079901 A2

(51) International Patent Classification7:

H₀3H

(21) International Application Number:

PCT/DK2004/000141

(22) International Filing Date: 3 March 2004 (03.03.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: PA 2003 00338

4 March 2003 (04.03.2003) DK

- (71) Applicant (for all designated States except US): OTICON A/S [DK/DK]; Strandvejen 58, DK-2900 Hellerup (DK).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): BEHRENS, Thomas [DK/DK]; c/o Oticon A/S, Strandvejen 58, DK-2900 Hellerup (DK). KJEMS, Ulrik [DK/DK]; c/o Oticon A/S, Strandvejen 58, DK-2900 Hellerup (DK). NIELSEN, Thomas, Bo [DK/DK]; c/o Oticon A/S, Strandvejen 58, DK-2900 Hellerup (DK).

- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

 without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: DIGITAL FILTER AND LISTENING DEVICE

(57) Abstract: The invention concerns a digital filter. The filter comprises at least a first and a second 5 delayed summation line, whereby one of the delay lines comprise a warped filter FIR filter and the other line is a FIR filter, whereby: at least two delayed summation lines are present, midpoint elements from the first delayed summation line are used as input to the second delayed summation line, output from the first delayed summation line is delayed with a delay corresponding to the total delay of the second delayed summation line, the delayed output from the first delayed summation line is added to output from the second delayed summation line to form a new output.